TRAVAUX DU MUSÉUM NATIONAL D'HISTOIRE NATURELLE «GRIGORE ANTIPA»

THE JOURNAL OF "GRIGORE ANTIPA" NATIONAL MUSEUM OF NATURAL HISTORY

Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa" 63 (2): 255–260 (2020)
doi: 10.3897/travaux.63.e59536

FAUNISTIC NOTE

The noctuid moth *Xylomoia graminea* (Lepidoptera: Noctuidae) new to the Romanian fauna

Constantin Corduneanu[1], Cătălin-Dumitrel Balan[2], Cristina Vasilița[3], Ovidiu-Alin Popovici[3]

1 *Sustainable Development Association OPTIM, 101 Calea Națională, 710051 Botoșani, Romania*
2 *Faculty of Chemical Engineering and Environmental Protection, "Gheorghe Asachi" Technical University, 73 Prof. dr. docent Dimitrie Mangeron, 700050 Iași, Romania*
3 *Research Group in Invertebrate Diversity and Phylogenetics, Faculty of Biology, "Alexandru Ioan Cuza" University of Iași, 20A Carol I, 700505 Iași, Romania*

Corresponding author: *Constantin Corduneanu* (corduneanuc@yahoo.com)

Received 19 October 2020 | Accepted 26 November 2020 | Published 31 December 2020

Citation: Corduneanu C, Balan C-D, Vasilița C, Popovici O-A (2020) The noctuid moth *Xylomoia graminea* (Lepidoptera: Noctuidae) new to the Romanian fauna. Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa" 63(2): 255–260. https://doi.org/10.3897/travaux.63.e59536

Abstract

In this paper, new data concerning the occurrence and distribution of *Xylomoia graminea* (Graeser, 1889) in Romania are given. Pictures of specimen and male genitalia are provided.

Keywords

Distribution, first record, Lepidoptera, Noctuidae, Romania, *Xylomoia graminea*.

Xylomoia graminea (Graeser, 1889) is a species of noctuid moth originally described from Khabarofka (Khabarovsk), Russia in 1889 as *Nonagria graminea* and has been subsequently transferred into the genus *Xylomoia* Staudinger, 1892. In the same paper (Staudinger 1892), a new species from southeastern Siberia (Sutchan district) is described – *Xylomoia separata* Staudinger, 1892. Later, it was found out that this new species is only a junior synonym of the species previously described by Ludwig Graeser in 1889. The Palaearctic and Sino-Japanese fauna (Wallace's updated biogeographical regions) is currently known to contain six species of the genus *Xylomoia*: *X. fusei* Sugi, 1976, *X. apameoides* Hacker 1989, *X. graminea* (Graeser, 1989), *X.*

Copyright *Corduneanu, Balan, Vasilița & Popovici*. This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

PENSOFT

strix (Mikkola, 1980), *X. stangelmaieri* Mikkola, 2002 and *X. retinax* Mikkola, 2002. *Xylomoia chagnoni* Barnes & McDunnough, 1917 is the only species of the genus restricted solely to the Nearctic region (Mikkola 1998). Up to now, in Europe, only *X. graminea, X. strix, X. stangelmaieri* and *X. apameoides* have been reported (Mikkola 1998; Bury and Zajda 2012).

The distribution of this species throughout the Palaearctic region is fairly well documented, being recorded from Japan (Sugi 1982), Korea (Herz 1904), Northern China (Han and Kononenko 2007), Russia (Poltavsky and Artohin 2000; Zolotarenko and Dubatolov, 2000), Ukraine (Klyuchko 1995; Klyuchko et al. 2001; Geryak 2009; Nowacki and Bidychak 2009; Geryak and Voyto 2013), Poland (Nowacki 1989; Nowacki 1993; Kokot 1995; Łupiński 1996; Nowacki and Hołowiński 1999; Wąsala 2001; Łupiński and Wasiluk 2002; Mazurkiewicz and Pałka 2003; Nowacki and Wasiluk 2004; Bury and Zajda 2012; Nowacki and Pałka 2013, 2015; Dawidowicz and Kucharczyk 2016), and Lithuania (Svitra et al. 2011; Ivinskis et al. 2018). However, the biology of the species is poorly known with only details provided by a recent study in South-Eastern Poland (Bury and Czudec 2019). Over an eight year survey, the authors managed to obtain valuable information regarding the egg-laying process and behaviour of caterpillars.

This paper presents the first record of genus *Xylomoia* in Romania by the presence of *Xylomoia graminea* and brings revealing images of the male imago and male genitalia.

Material examined: one male specimen captured on 17–18 June 2016, between 21:40 and 00:40 in Orăşeni Vale, about 10 kilometres away from the South of the city Botoşani (Botoşani, Romania) (Fig. 1A). Weather conditions: the temperature lowered from 23°C to 19°C, 70–90% humidity, the waxing gibbous moon was illuminated 87,5%, moonrise at around 19:00, sky partly covered – about 1/8. The specimen (Fig. 1B) was captured using a light trap, with a 160 W mercury vapor lamp. The trap was set on a low land (about 160 m altitude), wet forest dominated by willows (*Salix* sp.) and aspen (*Populus* sp.).

The specimen was mounted on an entomological pin and is deposited in Constantin Corduneanu personal collection, Botoşani (Romania). Images of the specimen were obtained using a Canon 650D camera.

Prior to spreading, male genitalia was dissected and analysed on a rectangular plastic transparent card, deposited under the specimen, on the same pin. A comprehensive description of male genitalia of *X. graminea* is provided by Zilli et al. (2005) and we consider it useless to reiterate it here. Images of the male genitalia (Fig. 1C) were taken with a Leica DFC 450 camera mounted on Leica 250A stereomicroscope.

Remarks: The finding of *X. graminea* in north-eastern Romania wasn't a surprising event, considering it has been reported repeatedly from Southern Poland, has a wide distribution throughout the Palaearctic region and has been found as south as Rostov on Don. The presence of this species in Ukraine suggested that it was only a matter of time until *X. graminea* would be encountered in Romania as well. In Poland, the occurrence of *Xylomoia graminea* is frequently reported with-

in protected areas, where the preserved habitats make it possible for this species to flourish and expand its distribution. It seems that *X. graminea* is a marker of a healthy habitat, most of the records being reported from preserved areas (Bury and Zajda 2012).

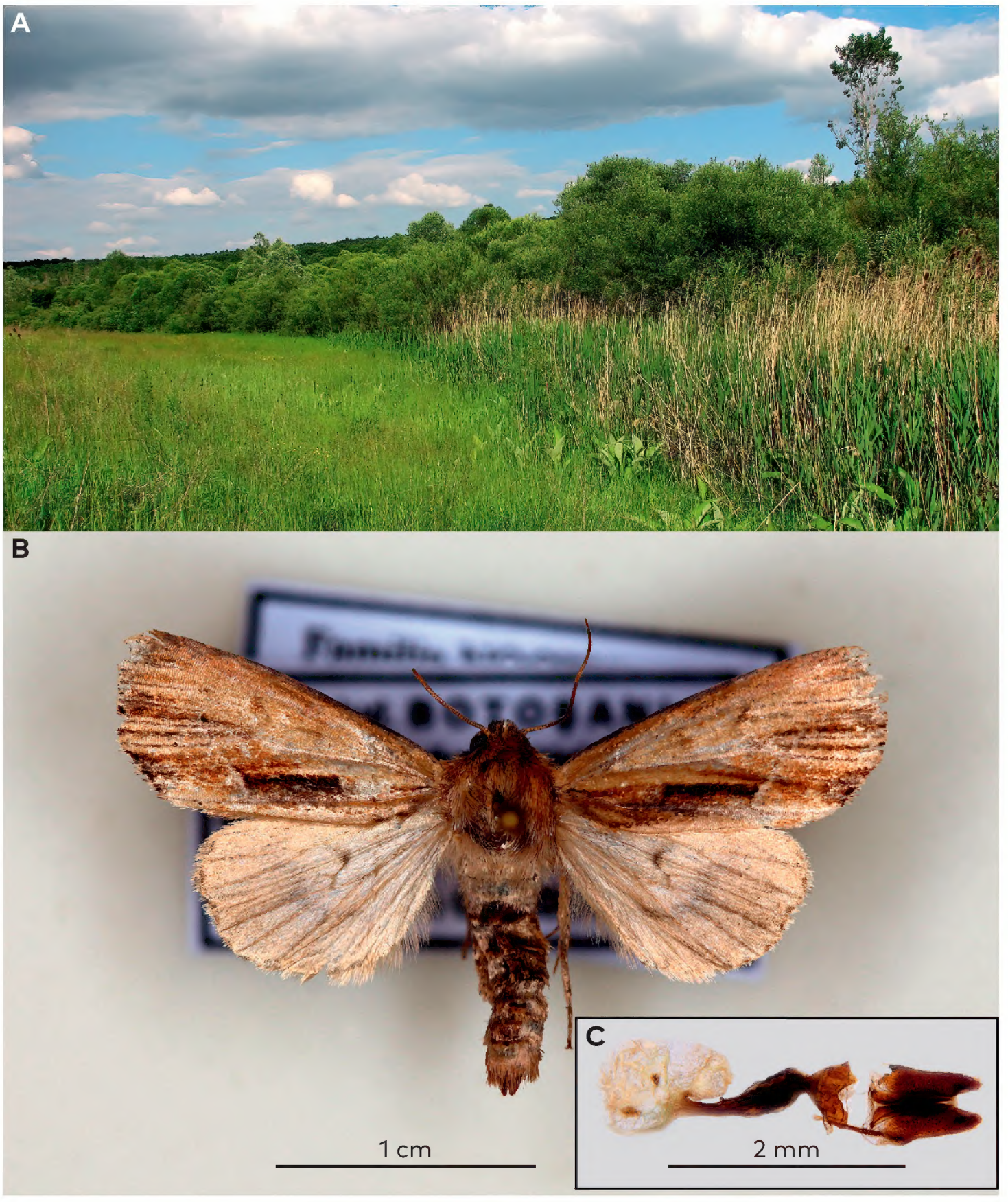

Figure 1. A. Habitat. Orășeni Vale, collecting site of *Xylomoia graminea*; B. *Xylomoia graminea* (Graeser, 1889) male specimen captured on 17-18 June, 2016 Orășeni Vale (Botoșani, Romania); C. *Xylomoia graminea* (Graeser, 1889) - male genitalia.

The previous data concerning the biology of this species indicated a preference for moist or wet habitats: wetland areas along rivers or lakes (Zilli et al. 2005; Bury and Czudec 2019). The site from Romania where we found this species accomplishes these requirements. We also took notice of the fact that *Xylomoia graminea* seems to share similar habitat preferences with *Arytrura musculus* (Ménétriés, 1859), a constant presence in the site Orășeni Vale (Corduneanu et al. 2007; Corduneanu 2011). We expect that the species might be encountered also in other regions of Romania and it would be curious to test the hypothesis of it sharing a habitat with *A. musculus.*

Acknowledgments

The authors express their gratitude towards Mr. Pintilioaie Alexandru Mihai for dissecting and mounting the male genitalia. Also, the authors would like to thank dr. László Rákosy (Babeș-Bolyai University) and dr. Mihai Stănescu (Grigore Antipa National Museum of Natural History) who confirmed the identification of the specimen.

References:

Bury J, Zajda W (2012) Distribution of *Xylomoia graminea* (Graeser, 1889) (Lepidoptera: Noctuidae) in Poland. Fragmenta Faunistica 55(2): 139–145.

Bury J, Czudec P (2019) Comments on the occurrence and biology of *Xylomoia graminea* (Graeser, 1889) (Lepidoptera: Noctuidae) from south-eastern Poland. Fragmenta Faunistica 62(1): 39–46.

Corduneanu C (2011) Protected lepidopteran species (Insecta: Lepidoptera) in North-East of Romania. Travaux du Muséum national d'histoire naturelle Grigore Antipa 54(1): 115–123.

Corduneanu C, Balan C, Surugiu I (2007) Lepidoptera of Humid Area „Orăşeni Vale" (Orăşeni Vale, Botoşani County, Romania). Entomologica romanica 12: 113–120.

Dawidowicz Ł, Kucharczyk H (2016) The Maria Curie-Skłodowska University Botanical Garden in Lublin as a refuge of the moths (Lepidoptera: Heterocera) within the city. Acta Biologica 23: 15–34.

Geryak YU (2009) До вивчення фауни совок (Noctuoidea, Lepidoptera, Insecta) урочища Білецький ліс (Україна, Львівська область) [On the fauna of noctuid moths (Noctuoidea, Lepidoptera, Insecta) of Biletsky forest (Ukraine, Lviv region)]. Hoverla 25: 176–185. [in Ukranian]

Geryak YU, Voytko P (2013) On the Noctuoidea (Lepidoptera, Insecta) fauna of Volyn region Scientifical Bulletin of Uzhgorod University 34: 76–86.

Han HL, Kononenko V (2007) Three species of the Family Noctuidae (Lepidoptera) new to China. Journal of Asia-Pacific Entomology 10(1): 17–19.

Herz O (1904) Lepidoptera von Korea. Noctuidae & Geometridae [Lepidoptera of Korea. Noctuidae & Geometridae]. Annuaire du Musée Zoologique de l'Academie Impériale des Sciences de St. Petersbourg 9: 263–390. [in German]

Ivinskis P, Rimšaitė J, Eismantas A (2018) Rare and new for the Lithuanian fauna Lepidoptera species. Bulletin of the Lithuanian Entomological Society 2: 30–37.

Klyuchko ZF (1995) *Xylomoia graminea* (Lepidoptera, Noctuidae) – a species new for Ukrainian fauna. Journal of the Ukrainian Entomological Society 1(3–4): 38.

Klyuchko Z, Plyushch I, Sheshurak P (2001) Annotated catalogue of noctuids (Lepidoptera, Noctuidae) of the fauna of Ukraine. Institute of Zoology of National Academy of Sciences of Ukraine, Kiev.

Kokot A (1995) Nowe dla Puszczy Augustowskiej gatunki sówkowatych (Lepidoptera, Noctuidae) [Noctuid moth species new to the Augustów Forest (Lepidoptera, Noctuidae)]. Wiadomości Entomologiczne 14: 62. [in Polish]

Łupiński D (1996) Co słychać w świecie motyli [What is new in the world of butterflies]. Biuletyn MTOF 2: 26–27. [in Polish]

Łupiński D, Wasiluk D (2002) Motyle nocne Macroheterocera Podlaskiego Przełomu Bugu [Night moths from Macroheterocera in Podlasie Bug valley]. In: Dombrowski A, Głowacki Z, Jakubowski W, Kovalchuk I, Michalczyk Z, Nikiforov M, Szwagier W, Wojciechowski KH (Eds) Korytarz ekologiczny doliny Bugu [Ecological corridor of the Bug valley] Stan - Zagrożenia - Ochrona. Fundacja IUCN Poland, Warsaw, 151–154. [in Polish]

Mazurkiewicz A, Pałka K (2003) New localities of rare noctuids (Lepidoptera: Noctuidae) in Poland. Wiadomości Entomologiczne 22(4): 251–252.

Mikkola K (1998) Revision of the genus *Xylomoia* Staudinger (Lepidoptera: Noctuidae), with descriptions of two new species. Systematic Entomology 23(2): 173–186.

Nowacki J (1989) *Xylomoia graminea* (Graeser, 1889) a noctuid moth new to the fauna of Poland and Europe (Lepidoptera, Noctuidae). Przegląd Zoologiczny 33: 445–447.

Nowacki J (1993) Nowe stanowiska sówkowatych (Lepidoptera, Noctuidae) w Polsce [New noctuid moths (Lepidoptera, Noctuidae) in Poland]. Wiadomości Entomologiczne 12: 62. [in Polish]

Nowacki J, Hołowiński M (1999) Sówkowate (Lepidoptera, Noctuidae) Lasów Sobiborskich. [Noctuid moths (Lepidoptera, Noctuidae) of the Sobibor forest] Wiadomości Entomologiczne 18 (Suppl. 1): 1–60.

Nowacki J, Wasiluk D (2004) The noctuids (Lepidoptera: Noctuidae) of the Central Podlasie Wiadomości Entomologiczne T. 23, Suplement 1: 1–54.

Nowacki J, Bidychak R (2009) Noctuid moths (Lepidoptera, Noctuidae) new and rare for the fauna of Zakarpatie, Ukraine. Polish Journal of Entomology 4(78).

Nowacki J, Pałka K (2013) Materiały do poznania rozsiedlenia sówkowatych (Lepidoptera: Noctuidae) wschodniej Polski. [Materials to learn about the distribution of noctuid moths (Lepidoptera: Noctuidae) in eastern Poland] Wiadomości Entomologiczne 32(2): 139–146. [in Polish]

Nowacki J, Pałka K (2015) Noctuid moths (Lepidoptera: Noctuoidea: Nolidae, Erebidae, Noctuidae) of the Nowa Dęba Military Training Area in the Sandomierz Primeval Forest (south-eastern Poland). Fragmenta Faunistica 58: 21–36.

Poltavsky AN, Artohin KS (2000) New and rare Macrolepidoptera of the Rostov-on-Don region in South Russia (Lepidoptera). Phegea 28(4): 131–147.

Staudinger O (1982) Die Macrolepidopteren des Amurgebiets. I. Theil. Rhopalocera, Sphinges, Bombyces, Noctuae. In: Romanoff NM (Ed) Mémoires sur les Lépidoptères 6: 83–658.

Švitra G, Bačianskas V, Ūsaitis T, Lukoševičius D (2011) Four new and 153 rare for the Lithuanian fauna Lepidoptera species recorded in 2011. New and rare for Lithuania insect species 23: 67–93.

Sugi S 1982. Noctuidae. Pp. 669–913. In: Inaue H, Sugi S, Kuroko H, Moriuti S, Kawabe A (Eds) Moths of Japan. I. Text. Kadansha, Tokyo.

Wasala R (2001) *Xylomoia graminea* (Graeser) (Lepidoptera: Noctuidae) gatunek nowy dla fauny Puszczy Białowieskiej [*Xylomoia graminea* (Graeser) a new species for the fauna of Bialowieza Forest]. Wiadomości Entomologiczne 20: 280. [in Polish]

Zilli A, Ronkay L, Fibiger M (2005) Apameini. Noctuidae Europaeae vol. 8. Entomological Press, Sorø, 323 pp.

Zolotarenko GS, Dubatolov VV (2000) A check-list of Noctuidae (Lepidoptera) of the Russian part of the West Siberian plain. Far Eastern Entomologist 94: 1–23.